Quarterly Report

October 1, 2004 to December 31, 2004

Project Title

Warm Water Species Fish Passage in Eastern Montana Culverts

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Research Assistants

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Introduction

This progress report covers work completed between October 1, 2004 and December 31, 2004. Work on the project during this period has been primarily devoted to student recruitment and equipment and site selection.

Project Objective

Culverts are a common and often the most cost effective means of providing transportation intersections with naturally occurring streams or rivers. Fish passage and fish habitat considerations are now typical components of the planning and design of waterway crossings. Many culverts in Montana span streams that support diverse fisheries. The health of these fisheries is an essential element of a recreational industry that draws hundreds of thousands of visitors to Montana annually. Additionally, there is growing recognition of the value of native Montana species, some of which are considered 'species of special concern' in the state. In recent years these concerns have become apparent for warm water species in low gradient, high sediment bearing, intermittently flowing streams that are typical of eastern Montana.

Transportation system planners, designers and managers recognize that fish passage through Montana's culverts is a concern. However, there is much contention concerning the impact that a culvert can have on a fishery. Recent basin-wide studies of various trout species that we conducted in western Montana indicate that the tools that some planners and designers promote for forecasting fish passage concerns may be overly conservative. Which species, life stages, and how many individuals must have fish passage access for how long, are questions that are often brought forward during discussions on the design and retrofitting of culverts to accommodate fish passage concerns. ***The problem is that for warm water fish species and settings in eastern***

Montana, the timing and number of fish that must pass a culvert to maintain viable species diversity in the watershed is unknown, and the physiologic abilities of these species relative to such common fish passage questions are often unknown.

Progress

Personnel We have recruited both of the research assistants for the project - Loren Barber and Leo Rosenthal will join the project on January 1, 2005. Loren has a B.S. Degree in Biomedical Sciences from Montana State University and will pursue a MS Degree in Land Rehabilitation. Leo has a B.S. Degree in Fish and Wildlife Science from MSU and will purse an MS degree in that field. Leo joins the project after 6 years of field work in the fisheries industry. We have also engaged Matt Blank to serve as a project manager for this project. Matt will assume this role beginning January 1, 2005.

Equipment We have decided to pursue the use of Texas Instruments half-duplex PIT tags in combination with antennas built in-house. We will begin by building a prototype antenna for testing in the MSU Civil Engineering hydraulics lab.

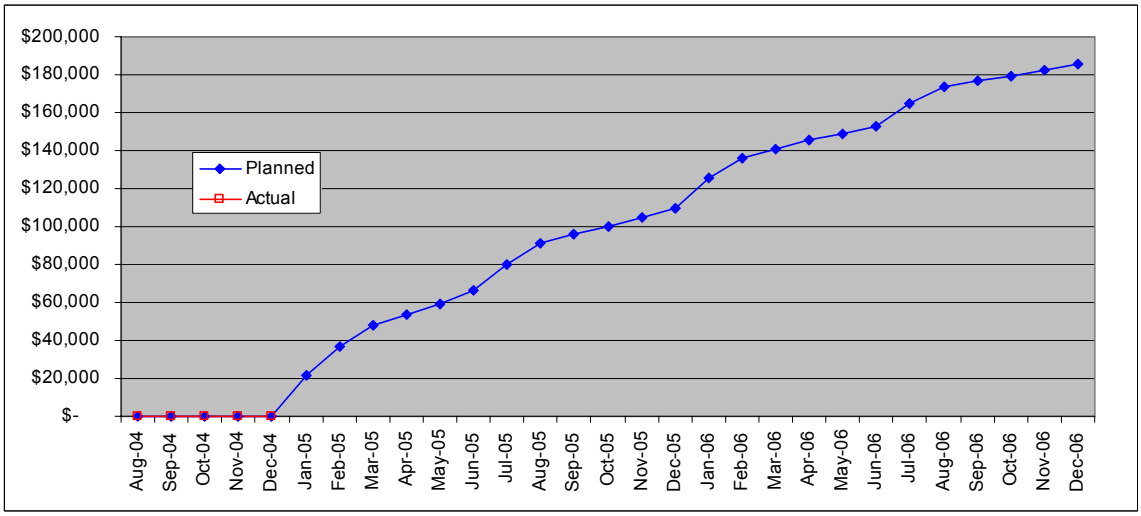
Site Selection Promising sites have been identified on Beaver Creek near Wibaux and tributaries to the Musselshell near Mosby. We plan to coordinate discussions with MDT and FW&P personnel in these areas to zero in on actual culverts for field work.

Future

In the next few months we will build and test prototype PIT equipment and begin to instrument the field sites. It appears that many of the species of interest at these sites spawn during the spring runoff when the creeks are high and flashy, and we would like to have field equipment in place for this cycle.

Budget

We have still had no expenditures to date, but with the research personnel now fully on board we look forward to an active next few months. This is indicated on the graph below. Jesse Patton, a graduate student working on a parallel MDT funded project has continued to help on this project too.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